

amendments to claims 1-3.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The rejection of claims 1-3 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. The term "derivatives" in claim 1 has been clarified in the above amendment to claim 1 by inserting the term "repeating unit" in several places where it is clear that the basic structure referred to is part of a polymer. Although the structure recited in the claims is a monomer, the intent is to claim a derivative having a repeating unit such as in a polymer.

Rejection Under 35 U.S.C. § 102(e)

The rejection of the claims as anticipated by the prior art of record is respectfully traversed. According to the present invention, it is possible to make a graphite material for the negative electrode of a lithium ion secondary cell that is excellent in charge/discharge efficiency (Coulomb efficiency) and in capacity retention rate. In the present invention, a graphite material for a negative electrode that is capable of occluding or releasing lithium ions, absorbs or is coated with starch derivatives having a basic repeating unit structure of $C_6H_{10}O_5$, or other surface active material, in an amount of 0.01 to 10 wt.% relative to the graphite material, or the graphite material further contains at least one metal element selected from the

group consisting of lithium, calcium, magnesium, sodium and potassium.

Liu '715 (USP 5,908,715) discloses in column 5, lines 60-64 that the surface of graphite core is coated with carbon precursor resin and this carbon precursor resin is subjected to heat treatment at 800 to 1,600°C to form non-graphitizable carbon material. In other words, the disclosed material is a "negative electrode material which is double-layered structure consisting of a graphite and non-graphitizable carbon."

On the other hand, the graphite particles of the present invention are prepared by coating the graphite particles with water-soluble surface active material. However, the surface active material is not carbonized by heat treatment, and the coating is a single layered structure.

JP '916 (Japanese Publication No. 09-147916) relates to "a nonaqueous secondary battery composed of a positive electrode and/or negative electrode, which has a protective layer consisting of solid particles and water soluble polymer." Disclosed in this reference are "inorganic chalcogenide particles (containing at least one member of the oxides of sodium, potassium, magnesium, calcium, strontium, zirconium aluminum and silicon)" as the solid particles and "polyacrylic derivatives or cellulose derivatives" as the water soluble polymer.

Although some components of the water soluble polymer forming the protective layer correspond to some surface active materials,

the electrode of the present invention contains none of the inorganic chalcogenide particles." The present invention is, therefore, different from the subject matter of this reference, nor is the invention suggested by the reference.

JP '407 (Japanese Publication No. 09-249407) is referred to in the present specification at page 2, line 27. As described in the present specification, this reference relates to "a material for a negative electrode of lithium cells, which material is prepared by forming mechano-chemically a graphite composite using graphite particles and solid element particles of Li, Al, Sn, Pb and Cd."

In contrast to this reference, the present invention relates to graphite material containing adsorbed, or coated with, surface active material; furthermore, as in claim 2, the invention contains together at least one alkali metal or alkaline earth element such as lithium, calcium, magnesium, sodium and potassium, that is different from the disclosure of this reference.

In summary, the several rejections of the claims as being anticipated under 35 U.S.C. § 102(e) is respectfully traversed. None of the references disclose the invention as presently claimed. The claims must be read in the light of the specification as a whole and the improved graphite material which is intended for use as a negative electrode of a lithium ion secondary cell has a single coating of a surface active material which is illustrated in the examples and which is in summary

defined by the claims. Neither the Liu '715 nor JP '916 nor JP '407 disclose the same graphite electrode material as is claimed in the present application when viewed in the light of the disclosure as a whole and the examples in the present specification. The coating material which is present on the graphite according to the present specification is not heat treated nor double layered as seen in Liu '715. Neither is the coating on the present invention a protective layer consisting of solid particles and a water soluble polymer as seen in the JP '916 publication. Neither is the disclosure of JP '407 reference anticipatory to the presently claimed invention because JP '407 relates to a material for a negative electrode of lithium cells which is prepared by forming mechanically and chemically a graphite composite with graphite particles and solid element particles of certain elements such as lithium, aluminum, tin, lead and cadmium. The presently claimed invention is not such a graphite composite, but rather is a graphite material containing adsorbed or coated surface active material. As in claim 2 of the present application, the surface active material may contain alkali metal or alkaline earth metal elements.

In view of the foregoing arguments and amendments which have been offered, it is respectfully submitted that the present invention as now claimed is patentable over the references and early and favorable action on this application is respectfully solicited.

Application No.: 09/254,316

If the Examiner has any questions concerning this application, he is requested to contact Edward H. Valance, Reg. No. 19,896, at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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